

The SBL1 is a rugged, sensor box with one sensor & an integrated power supply for a 4...20mA current-loop output.



Features

- Highly stable die-cast aluminium housing
- Angle adjustable vibration dampers mounted to support the 3.2mm motherboard
- Built-in current amplifier for a 4...20mA current-loop output
- Temperature compensation
- No need for extra supply power
- All N- or NG-type sensors can be integrated into the SBL1 and mounted in different sensing directions
- The SBL1 unit will be supplied with customer specific measurement ranges
- Sensor and current-loop are galvanically separated from each other
- EMC protections are standard
- Highly stable sensor supply
- Current-loop with max. limitation
- Very high mechanical overload
- Non-polarity restrictions
- Low-pass filtering with optional choice of filter suppression frequencies

Description

The SBL1 sensor box is packaged in a solid die-cast aluminum housing (IP54) with an integrated sensor for single axis inclination measurements.

Within the box are 2 sections: An amplifier with a 4...20mA current-loop output proportional with the working range of the integrated sensor and a separate highly stable power supply for the sensor, which obtains its power from the 8...30VDC box supply. Both sensor and amplifier are galvanically isolated from the housing - further reducing susceptibility to outside noise. A custom low-pass filter and a suppression filter combine to eliminate interference coming into the system.

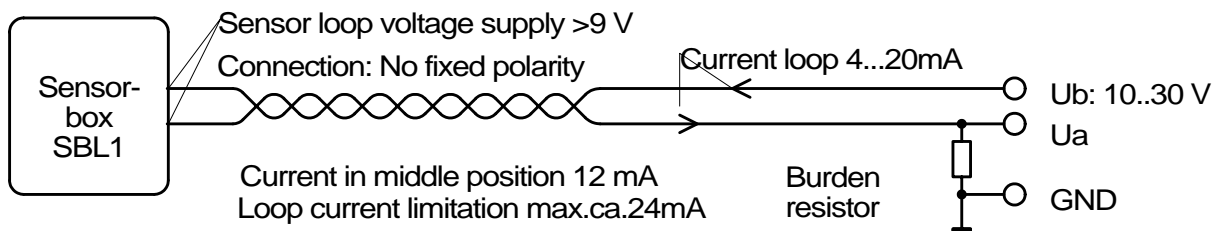
For a very high degree of accuracy, an NG-type sensor can be integrated into the SBL1 box, which considerably reduces temperature drift over the entire temperature range.

Applications

The SBL1 is recommended for use where inclination measurements are needed where mechanical vibration occurs in such areas as conveyor systems, mining and agricultural equipment, and all types of process machinery.

Technical Data	
Termination/Cable diameter	Max.: 3 x 1.5 mm ² (2 x Signal + 1 x Mass)
Cable Diameter	Ø12...Ø21,5mm
Cable fixing	PG21 (Metal with strain relief)
Measuring ranges	In accordance with the actual sensor
Protection degree	IP54
Mounting	Any direction
Sensor measuring plane (N Series)	3 directions of mounting
Sensor measuring plane (NG Series)	Parallel to the base of housing
Supply voltage to the box	+8...+30 Volt
Minimum current	Approximately 3mA
Maximum current	Approximately 24mA
Measuring current range	4...20mA (12mA at zero)
Output impedance	100Ω
Zero/amplifier potentiometer	Signal-zero (12mA), amplifier
Maximum load impedance	500Ω (at 24V current power supply)
Operating temperature	-40...+85°C
Options	
Special measuring ranges, test report	

SBL1 Wiring Connections



Minimum loop current = Current supply sensor + electronics < 4 mA

U_{bmin} = 9V + voltage drop in cable + voltage drop over resistor to 20mA

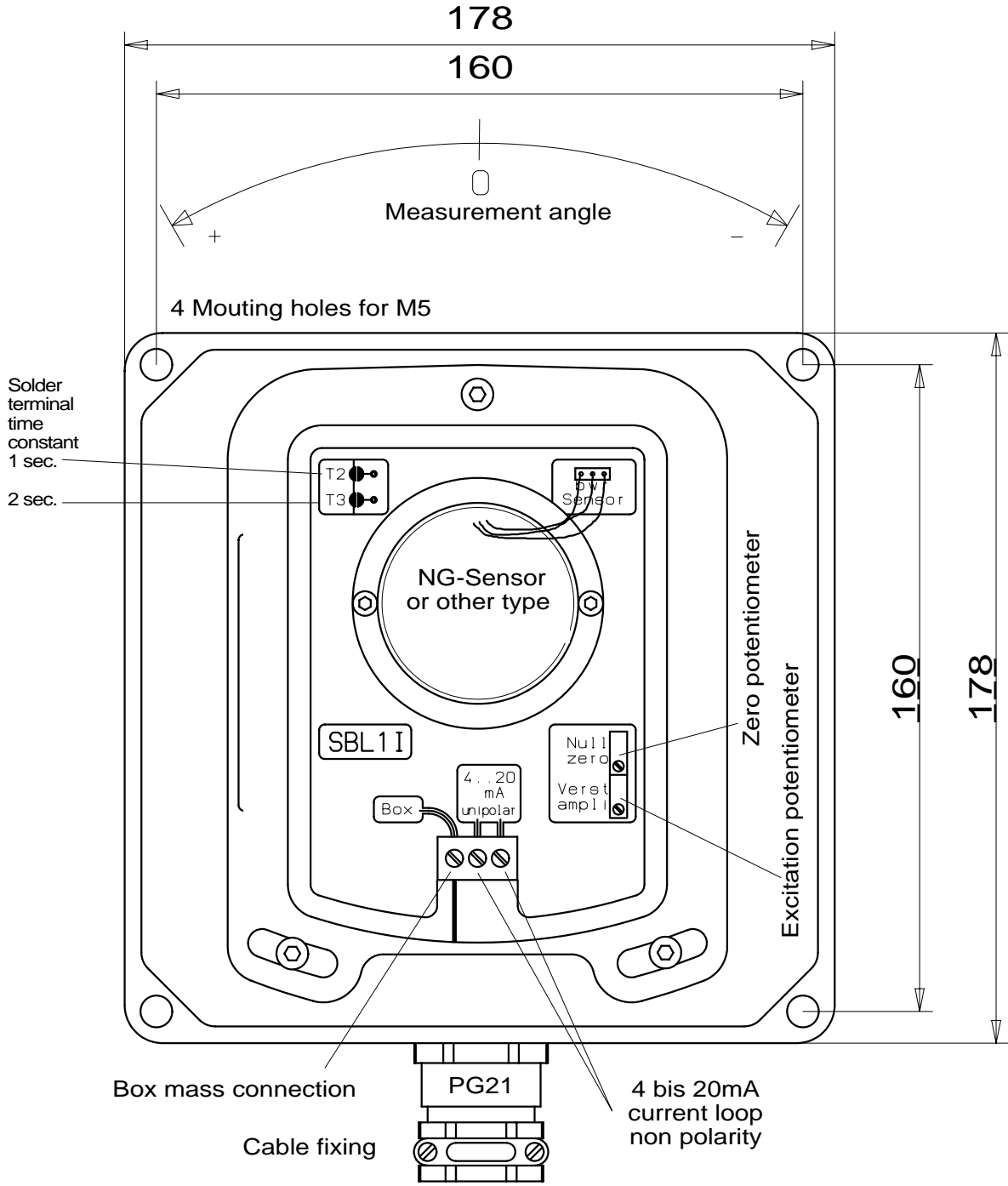
U_{bmin} = 9V + (20mA * R(cable)) + (20mA * R(resistor))

z.B. (100m wire 2x0,14mm² :) 0,6V + (resistor 100 Ohm:) 2V + 9V = U_{bmin} = 11,6V

z.B. (2km cable 2x0,5mm² :) 3,2V + (resistor 500 Ohm:) 10V + 9V = U_{bmin} = 22,2V

Since the supply voltage for the SBL1 are obtained from the current loop and the SBL1 requires max.3mA, an input voltage of 9Volts min. must be supplied at the connection block of sensorbox. This is also required in order to guarantee correct operation when the highest loop current of approx.24 mA is used.

SBL1 Dimensions (in mm)



Base board are mounted on 3 vibration dampers

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